

The thesis summarizes basic properties of the negative binomial distribution, including estimations of unknown parameters which are derived with the help of the method of moments and the maximum likelihood method. The main part of the thesis describes the bivariate negative binomial distribution. Basic properties of the studied distribution are derived. For instance marginal distribution, distribution of the sum of elements and conditional distribution are negative binomial. The unknown parameters are estimated using the methods of moments and maximum likelihood method. The consistency and asymptotic normality of these estimators are proved. The final sample behaviour of the estimators is investigated in a small simulation study. The described bivariate distribution is applied to real traffic accidents data set from the Czech Republic.